

**Statement of Basis  
Proposed  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT  
NO. CA 0005241**

Permittee's Name: Dry Creek Rancheria Band of Pomo Indians

Mailing Address: P.O. Box 607  
Geyserville, CA 95441

Plant Location: 3250 Highway 128 East  
Dry Creek Rancheria, CA 95441

Contact Person Tom Keegan, Director of Environmental Protection  
(707) 473-2178

**I. Status of Permit**

This is a new permit application to allow surface water discharges for an existing facility that currently land applies and/or recycles all wastewater on-site. In accordance with 40 CFR 122.2, this is classified as a new discharger.

**II. General Information**

The Dry Creek Rancheria is located in Sonoma County on Highway 128 in Sonoma County, California near the City of Geyserville.

**III. Facility Information**

The existing waste water treatment plant (WWTP) serves the Dry Creek Rancheria, which includes a casino with an average daily population of approximately 5,000 guests and employees. Wastewater generated by the Rancheria includes sewage, restaurant washwaters, and miscellaneous wastewater from guest support services.

The WWTP was constructed in the first quarter of 2003 and expanded upon in the fall of 2004. The WWTP has an average daily design flow rate of 150,000 gallons per day (gpd) and a maximum capacity of 200,000 gpd. The average daily flow rate in 2003 was 15,000 gpd, rising to 30,000 gpd in 2004 gpd and 40,000 gpd in 2005. The maximum daily flow in the two years was 47,000 gpd. Additional construction planned includes increasing capacity for effluent storage.

Currently, all wastewater generated from the Dry Creek WWTP is either land-applied on site (through landscape irrigation or spray-field irrigation) or re-used on-site (through use in toilet flushing).

The WWTP is anticipated to have an average annual flow of 112,000 gpd at projected use levels. However, the projected flows at a casino facility may differ significantly from weekday to weekend due to usage, and the facility projects an average weekend flow of 141,000 gpd, with a peak capacity of 200,000 gpd. Wastewater generated by the WWTP will continue to be recycled and re-used on site for toilet flushing and on-site irrigation as much as practical. Only the volume of wastewater that cannot be recycled or re-used will be discharged. Due to climatic conditions, a higher percentage of wastewater flow will be dedicated for irrigation use during the summer months than during the winter months.

At the headworks, wastewater is screened by a self-cleaning rotary screen with 1/4" openings that is covered to control odors. Screened materials are collected in the screening bin and trucked off-site.

Wastewater flows to a 31,000 gallon transfer tank and then to 2 parallel sequencing batch reactors (SBR) with 92,000 gallon capacity each. The raw wastewater is fairly high strength with an influent BOD<sub>5</sub> concentration of approximately 650 mg/L due to water use in the casino. The batches are run in cycles to accomplish denitification of wastewater through timed periods of aeration and nitrification. Approximately 75% of each batch is decanted and pumped to a 31,000 gallon filter flow equalization tank. The decant from the equalization tank is sent to 3 continuous upflow sand filters operated in parallel. A polymer is added to the inflow line prior to the sand filters to enhance coagulation. The sand is continuously backwashed and recirculated back into the media through an air cleaning system. The reject from the continuous upflow air cleaning system is sent to the sludge storage tank, decanted, and shipped off-site. Chlorine is used approximately once per month to clean the sand filter media.

Effluent from the sand filters is disinfected through UV disinfection consisting of 3 banks of 2 UV units in parallel. The system operates so that 2 of the 3 banks are in use, while the 3<sup>rd</sup> bank undergoes cleaning. Effluent to be used on-site is pumped to a 35,200 gallon chlorine contact tank. Disinfected effluent is sent to storage tanks which currently store up to 200,000 gallons of recycled water for emergency overflow.

#### **IV. Receiving Water**

The effluent from the WWTP that cannot be recycled or re-used will be discharged to two receiving waters via three discharge points. The primary receiving water will be to Stream P1 (Outfall 001) and the secondary discharge location will be to Stream A1 (Outfall 002 and Outfall 003). Stream P1 is located on the Rancheria and is an unnamed tributary to the Russian River. Stream A1 is located on the Rancheria and is an unnamed ephemeral channel that is classified as an inland surface waterbody, and does not have a direct connection with the Russian River or any

other water of the U.S.

Stream P1: Surface water discharge to Stream P1 will be the primary method of effluent discharge. Effluent will be conveyed to an existing storm water detention basin located to the south and west of the WWTP. Wastewater from the detention basin will flow through an outlet and down a rip-rap cascade aeration system and sheet flow until it reaches a culvert at the toe of the slope. The culvert transfers water underneath the road into an unnamed ephemeral channel where it travels approximately 500 feet before intercepting Stream P1, a partially ephemeral and partially perennial stream that is a Water of the U.S. The ephemeral section flows southwesterly for several hundred feet until it reaches a segment of the stream that is perennial where the slope levels off. The Tribe has recently restored this section of the stream by cleaning out materials, stabilizing the area, and planting native vegetation. The perennial segment continues for several hundred feet until it reaches a culvert passing under Highway 128. At Highway 128, the perennial flow disappears into the subsurface alluvium. From the Highway, the stream is a straight conveyance channel maintained free of vegetation until it reaches the Russian River for approximately ½ mile. The distance of the WWTP to P1's confluence with the Russian River is approximately 1 mile.

Stream A1: For the discharge to Stream A1, the WWTP will convey effluent in new pipelines around the casino to the north of the WWTP. Effluent will be discharged into an existing ephemeral channel within Tribal lands through one of 2 discharge points, Outfall 002 located immediately north of the WWTP, and Outfall 003 located approximately ½ mile further upstream from Outfall 002. Stream A1 flows from the discharge location along the northeast border of the Tribal lands before flowing off Tribal lands to the west. The stream crosses under Highway 128 and turns to the south within a roadside ditch. The roadside ditch is bermed to the south and runs for approximately ½ mile until the ditch ends at a mile marker located at 38° 41' 54.47" N 122° 51' 37.78" W. At the terminus of the ditch, any excess flow sheetflows onto a private vineyard.

The U.S. Army Corps of Engineers has determined that the Stream A1 channel, which includes the roadside ditch, is hydrologically isolated from the Russian River or other navigable waters of the United States in the watershed, as it terminates in the vineyards. Therefore, the channel is not tributary to the Russian River. Because this waterbody crosses from Tribal lands to lands under the jurisdiction of the State of California, it is defined as an interstate water of the U.S.

## **V. Description of Discharge**

The discharge will be tertiary treated municipal wastewater. Disinfection will be primarily by UV disinfection prior to discharge.

The permit application lists the following effluent data for the existing (non-discharging)

treatment system:

Pollutant or parameter	Maximum Daily Discharge	Average Daily Discharge Concentration
BOD <sub>5</sub>	< 5 mg/L	<5 mg/L
TSS	22 mg/L	7.7 mg/L
Fecal Coliform	<2 MPN/100ml	<2 MPN/100ml
Ammonia (as N)	4.2 mg/L	1.06 mg/L
Chlorine (total residual)	0.2 mg/L	0.1 mg/L
Dissolved Oxygen	5.14 mg/L	4.83 mg/L
TKN	4.7 mg/L	2.1 mg/L
Oil and Grease	6.1 mg/L	1.0 mg/L
Total Dissolved Solids	1300 mg/L	1117 mg/L

## VI. Regulatory Basis for NPDES Permit Effluent Limitations

Section 301(a) of the Clean Water Act provides that the discharge of any pollutant to waters of the United States is unlawful except in accordance with an NPDES permit. Section 402 of the Act establishes the NPDES program. The program is designed to limit the discharge of pollutants into waters of the U.S. from point sources (40 CFR 122.1 (b)(1)) through a combination of various requirements including technology-based and water quality-based effluent limitations.

### Technology-based effluent limitations

Under 40 CFR Part 125.3(c)(2), Technology based treatment requirements may be imposed on a case-by-case basis under Section 402(a)(1) of the Act, to the extent that EPA promulgated effluent limitations are inapplicable, i.e., the regulation allows the permit writer to consider the appropriate technology for the category or class of point sources and any unique factors relating to the applicant.

The minimum levels of effluent quality attainable by secondary treatment for Settleable Solids, as specified in the EPA Region IX Policy memo dated May 14, 1979, are listed below:

30-day average - 1 ml/l  
Daily maximum - 2 ml/l

EPA developed technology-based treatment standards for municipal wastewater treatment plants in accordance with Section 301(b)(1)(B) of the Clean Water Act. As a municipal wastewater treatment system, the minimum levels of effluent quality attainable by secondary treatment for Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), and pH, as defined in 40 CFR 133.102, are listed below and are incorporated in the permit.

**BOD:**

Concentration-based Limits

30-day average - 30 mg/l

7-day average - 45 mg/l

Removal Efficiency - minimum of 85%

**TSS:**

Concentration-based Limits

30 - day average - 30 mg/l

7 - day average - 45 mg/l

Removal efficiency - Minimum of 85%

**pH:**

Instantaneous Measurement: 6.0 - 9.0 standard units (s.u.)

2. Water Quality-Based Effluent Limitations

Sections 402 and 301(b)(1)(C) of the Clean Water Act require that the permit contain effluent limitations that, among other things, are necessary to meet water quality standards. 40 CFR 122.44(d) provides that an NPDES permit must contain:

“Water quality standards and State requirements: any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, 318 and 405 of CWA necessary to:

(1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.”

40 CFR 122.44 (d)(1)(i) states:

“Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be

discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.”

40 CFR 122.44 (d) (1) (ii) states:

“When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water.”

40 CFR 122.44 (d)(1) (iii) states:

“When the permitting authority determines using the procedures in paragraph (d)(1)(ii) of this section, that a discharge causes, has the reasonable potential to cause or contributes to an in-stream excursion above the allowable ambient concentration of a State numeric criteria within a State water quality standard for an individual pollutant, the permit must contain effluent limits for that pollutant.”

Guidance for the determination of reasonable potential to discharge toxic pollutants is included in both the Technical Support Document for Water Quality-Based Toxics Control (TSD) - Office of Water Enforcement and Permits, U.S. EPA, dated March 1991 and the U.S.EPA NPDES Permit Writers Manual - Office of Water, U.S. EPA, dated December 1996. EPA's technical support document contains guidance for determining the need for permit limits. In doing so, the regulatory authority must satisfy all the requirements of 40 CFR 122.44(d)(1)(ii). In determining whether the discharge causes, has the reasonable potential to cause or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants, the regulatory authority must consider a variety of factors. These factors include the following:

- Dilution in the receiving water,
- Existing data on toxic pollutants,
- Type of industry,
- History of compliance problems and toxic impacts,
- Type of receiving water and designated use.

Therefore, based on WWTP operations and projected waste water quality data provided in the application, EPA conducted a "reasonable potential" analysis to compare effluent discharges to water quality standards, as required by 40 CFR 122.44(d)(1)(ii), (iii) and (iv).

A. Dilution in the receiving water

Discharge from Outfall 001 is to stream P1, a tributary to the Russian River, and Outfalls 002 and 003 are to stream A1, an inland surface waterbody that terminates prior to reaching the Russian River. Both P1 and A1 may have no natural flow during certain times of the year. Therefore, no dilution of the WWTP effluent has been considered in the development of water quality based effluent limits applicable to the discharge.

B. Existing data on toxic pollutants

This is a new discharge and therefore no discharge of effluent to surface waters has been reported. The WWTP will serve the Rancheria, including all flows that originate from sanitary uses at the casino. No industrial sources will discharge to the WWTP, although there is a restaurant in the casino.

Although the WWTP has never discharged, operational data for conventional and non-conventional pollutants is available from the current treatment system performance (wastewater is used for re-use) and is presented in Section V of the statement of basis. The available data consists of BOD<sub>5</sub>, TSS, TDS, ammonia, TKN, coliform, oil and grease, dissolved oxygen, residual chlorine, and pH. No data on priority pollutants is available at this time because the WWTP was not required to conduct monitoring of toxic pollutants for its re-use. Due to the nature of the wastewater sources and level of treatment provided, it is not expected that priority pollutants will be present in the effluent at concentrations that will have the reasonable potential to cause or contribute to an exceedance of water quality standards. However, the permittee will be required to conduct a full scan of priority pollutants within 90 days of discharge from the new treatment plant and in the 3rd and 5th year thereafter. Reasonable potential will be re-evaluated at this time and the permit may be re-opened to incorporate new water quality based limits as necessary.

C. Type of Industry

Typical pollutants of concern in untreated and treated domestic wastewater include ammonia, nitrate, oxygen demand, pathogens, temperature, pH, oil and grease, and solids. Chlorine and turbidity may also be of concern due to treatment plant operations.

D. Receiving Water

The Tribe does not have approved water quality standards for discharges to waters located on the Rancheria. However, the discharge of wastewater from the WWTP flows to a tributary of the Russian River (via Stream P1) for which the State of California has established water quality standards. Therefore, water quality standards applicable to the Russian River and its tributaries are applicable to the discharge at the point where the discharge enters State waters. EPA has therefore applied water quality standards based on the Water Quality Control Plan for the North Coast Region ("Basin Plan") for the

Russian River, Geyserville Hydrologic Subarea in the permit. In order to be conservative, the permit establishes the water quality standards applicable at the State boundary directly to the discharge location of the wastewater treatment plant without the benefit of dilution, i.e., establishing “end-of-pipe” limits. The Basin Plan lists the following beneficial uses:

**MUN** Municipal and Domestic Supply  
**AGR** Agricultural Supply  
**IND** Industrial Service Supply  
**GWR** Groundwater Recharge  
**FRSH** Freshwater Replenishment  
**NAV** Navigation  
**REC-1** Water Contact Recreation  
**REC-2** Non-Contact Water Recreation  
**COMM** Commercial and Sport Fishing  
**WARM** Warm Freshwater Habitat  
**COLD** Cold Freshwater Habitat  
**WILD** Wildlife Habitat  
**RARE** Rare, Threatened, or Endangered Species  
**MIGR** Migration of Aquatic Organisms  
**SPWN** Spawning, Reproduction, and/or Early Development

The following are listed as potential beneficial uses:

**PRO** Industrial Process Supply  
**POW** Hydropower Generation  
**SHELL** Shellfish Harvesting  
**AQUA** Aquaculture

The discharge of wastewater also flows to an inland surface water (Stream A1) that is not a tributary to the Russian River. For purposes of this permit, EPA has established water quality based effluent limitations and standards for the control of pollutants based on the beneficial uses established in the Basin Plan for the Russian River, Geyserville Hydrologic Subarea as listed above. However, because Stream A1 is not tributary to the Russian River and does not have a direct connection to the Russian River or its tributaries, the permit does not contain the flow restrictions contained in the Basin Plan for the Russian River and its tributaries.

Additionally, the Russian River is listed as an impaired waterbody for sedimentation/siltation and temperature pursuant to Section 303(d) of the Clean Water Act.

E. Rationale for Effluent Limitations



EPA evaluated the typical pollutants expected to be in WWTP discharge effluent and selected the most stringent of applicable technology-based standards or water quality-based effluent limitations. Where effluent concentrations of toxic parameters are unknown or are not reasonably expected to be discharged in concentration that have the reasonable potential to cause or contribute to water quality standards, EPA has established monitoring requirements in the permit. This data will be re-evaluated and the permit re-opened to incorporate effluent limitations if necessary based on additional monitoring data.

#### *Ammonia*

Treated and untreated domestic wastewater may contain levels of ammonia that are toxic to aquatic organisms. Ammonia is converted to nitrate during biological nitrification process, and then nitrate is converted to nitrogen gas through biological denitrification process. USEPA's Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life recommends acute and chronic criteria that are pH and temperature dependent. Due to the potential for ammonia to be present in sanitary wastewater at toxic levels and due to the conversion of ammonia to nitrate, effluent limitations are established for ammonia.

#### *Biochemical Oxygen Demand (BOD)*

The Basin Plan contains the requirement that, in addition to flow restrictions, "the discharge of municipal waste during October 1 through May 14 shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger..."

EPA is interpreting the Basin Plan's requirement to discharge "advanced treated wastewater" to require water quality discharge restrictions for TSS and BOD<sub>5</sub> more stringent than technology-based secondary treatment standards. Therefore, EPA has incorporated water quality based standards for BOD<sub>5</sub> more stringent than technology-based standards that are consistent with the discharge requirements for other municipal wastewater discharges in the north coast regional area. The permit therefore establishes an average monthly limit of 10 mg/L, an average weekly maximum of 15 mg/L, and a daily maximum limit of 20 mg/L. These limits are more stringent than technology-based standards and have been incorporated into the permit.

#### *Nitrate*

Treated and untreated domestic wastewater may contain levels of ammonia that are toxic to aquatic organisms. Ammonia is converted to nitrate during biological nitrification process, and then nitrate is converted to nitrogen gas through biological denitrification process.

The primary MCL for protection of MUN is 10 mg/L and the USEPA Ambient Water

Quality Criteria for the Protection of Human Health is also 10 mg/L for non-cancer effects. Due to the potential for ammonia to be present in sanitary wastewater and due to the conversion of ammonia to nitrate, effluent limitations are established for nitrate (measured as N).

*Total Dissolved Solids/Electrical Conductivity*

To protect the beneficial uses of water for agriculture uses, studies by the United Nations have recommended a goal of 700 umhos/cm for electrical conductivity (EC). The California Department of Health Services has recommended an SMCL for EC of 900 umhos/cm, with an upper level of 1600 umhos/cm and a short term level of 2200 umhos/cm.

Due to lack of discharge data, it is unknown at this time if the discharge from the new WWTP will have the reasonable potential to cause or contribute to an exceedance of water quality standards. Therefore, the draft permit establishes monthly monitoring requirements for EC and TDS to assess reasonable potential.

*pH:*

The basin plan requires that a pH of 6.5-8.5 must be met at all times and that changes in normal ambient pH level not exceed 0.5 units. This is more stringent than technology based requirements for pH, therefore, this limit is included in the permit.

*Total Coliform bacteria:*

Based on the nature of WWTP effluent, there is a reasonable potential for coliform bacteria to violate water quality standards. Based on REC-1 Beneficial Use, total coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed 200/100 ml, nor shall more than 10% of the total number of samples during any 30-day period exceed 400/100 ml - 10% of samples for 30-day period. Based on MUN standards, total coliform must not exceed 2.2 /100mL in a 7 day average. Since the MUN is the most stringent standard, this limit is included in the permit.

Additionally, the basin plan states that the discharge of municipal waste during October 1 through May 14 shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger, and shall meet a median coliform level of 2.2 mpn/100 ml. The permit requirements based on MUN are consistent with this requirement.

The effluent is designed to meet California (Title 22) disinfection standards for the re-use of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered and that the effluent total

coliform levels not exceed 2.2 MPN/100 ml as a 7-day median.

*Total Suspended Solids (TSS):*

The Basin Plan contains the requirement, in addition to flow restrictions, that “the discharge of municipal waste during October 1 through May 14 shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger...”

EPA is interpreting the Basin Plan’s requirement to discharge “advanced treated wastewater” to require water quality discharge restrictions for TSS and BOD<sub>5</sub> more stringent than technology-based secondary treatment standards. Therefore, EPA has incorporated water quality based standards for BOD<sub>5</sub> more stringent than technology-based standards that are consistent with the discharge requirements for other municipal wastewater discharges in the north coast regional area. The permit therefore establishes an average monthly limit of 10 mg/L, an average weekly maximum of 15 mg/L, and a daily maximum limit of 20 mg/L. These limits are more stringent than technology-based standards and have been incorporated into the permit.

The Russian River is listed as an impaired water body for sedimentation/siltation pursuant to Section 303(d) of the Clean Water Act. A Total Maximum Daily Load has not been established to address sediment loadings. Aspects of the sediment impairing the Russian River include settleable solids, suspended solids, and turbidity. The impact of settleable solids results when they collect on the bottom of a waterbody over time, making them a persistent or accumulative constituent. The impact of suspended solids and turbidity, by contrast, results from their concentration in the water column. EPA concluded that the discharge does not contain sediment (i.e., settleable solids, suspended solids, and turbidity) at levels that will cause, have the reasonable potential to cause, or contribute to increases in sediment levels in the Russian River. This finding is based on the advanced level of treatment provided, including filtration, which reduces settleable solids, total suspended solids and turbidity to negligible levels through filtration of effluent. The summer discharge prohibition, the one-percent flow limitation for winter discharge to the Russian River, and the results of previous solids and turbidity monitoring (conducted for wastewater reuse) also support this conclusion.

*Total Residual Chlorine:*

Chlorine will not be used to disinfect WWTP effluent intended for discharge, which is disinfected through the use of filtration and UV disinfection, although chlorine is used at the WWTP approximately once/month to clean the sand filters. Chlorine will also be added to recycled effluent immediately prior to storage in the recycle water storage tanks. This water is not anticipated to be discharged, but may, in certain circumstances, be discharged after dechlorination.

Although chlorine is not expected to be present in the discharge, EPA believes there is a reasonable potential for chlorine residual to be present due to the use of chlorine at the WWTP and its use for reclaimed water applications. Therefore, effluent limits for residual chlorine have been included in the permit to verify compliance.

Additionally, the permittee will be required to develop a “Surface Water Discharge Operations Plan”, which will include the requirement to maintain an on-site log book of chlorine usage and wastewater flows directed to discharge or reclamation to ensure that wastewater intended for discharge is not chlorinated.

*Dissolved oxygen*

The basin plan contains the requirement that dissolved oxygen not be reduced below 7.0 mg/L. Therefore, this is included in the permit.

*Oil and Grease*

Treated and untreated domestic wastewater may contain levels of oil and grease which may be toxic to aquatic organisms. There are no numeric water quality standards for oil and grease (only narrative standards which have been incorporated into the permit). Therefore, an effluent limit based on Best Professional Judgement is being established. Therefore, this is included in the permit.

*Toxicity:*

The basin plan includes a narrative objective for toxicity that requires that: All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.

Therefore, the permit requires monitoring for toxicity based on Whole Effluent Toxicity Procedures to assess the reasonable potential of the discharge to have toxic effects on aquatic organisms.

3. Narrative water quality standards:

Narrative water quality standards contained in the permit are based upon water quality objectives contained in the Basin Plan.

F. \_\_\_\_\_ Flow Limitations

The Basin Plan includes a prohibition against discharge to the Russian River and its tributaries during the period May 15 through September 30 and all other periods when the waste discharge flow is greater than one percent of the receiving stream’s flow. From the Basin Plan:

#### **“WASTE DISCHARGE PROHIBITIONS**

Section 13243 of the Porter-Cologne Water Quality Control Act authorizes the Regional Water Board - in a water quality control plan or in waste discharge requirements - to specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.

Under this authority and in order to achieve water quality objectives, protect present and future beneficial water uses, protect public health, and prevent nuisance, the Regional Water Board declares that point source waste discharges, except as stipulated by the Thermal Plan, the Ocean Plan, and the action plans and policies contained in the Point Source Measures section of this Water Quality Control Plan, are prohibited in the following locations in the Region:

.....

#### **North Coastal Basin**

.....

4. The Russian River and its tributaries during the period of May 15 through September 30 and during all other periods when the waste discharge flow is greater than one percent of the receiving stream's flow as set forth in NPDES permits. In addition, the discharge of municipal waste during October 1 through May 14 shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger, and shall meet a median coliform level of 2.2 mpn/100 ml. 2

<sup>2</sup> For dischargers not in compliance with the waste discharge rate limitation and/or advanced wastewater treatment, time schedules shall be set forth in NPDES permit updates for each discharger. In addition, each discharger not in compliance shall report to the Regional Water Board on progress towards compliance on an annual basis.”

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Additionally, the Basin Plan allows exceptions for cause to the one-percent discharge rate restriction. Exceptions must be in accordance with the following exception criteria:

“A. The wastewater treatment plant shall be reliable. Reliability shall be demonstrated through analysis of the features of the facility including, but not limited to, system redundancy, proper operation and maintenance, and backup storage capacity to prevent the threat of pollution or nuisance.

B. The discharge of waste shall be limited to rates and constituent levels which protect the beneficial uses of the receiving waters. Protection shall be demonstrated through analysis of all the beneficial uses of the receiving waters. For receiving waters which support domestic water supply (MUN) and water contact recreation (REC1), analysis shall include expected normal and extreme weather conditions within the discharge period, including estimates of instantaneous and long-term minimum, average, and maximum discharge flows and percent dilution in receiving waters. The analysis shall evaluate and address cumulative effects of all discharges, including point and nonpoint source contributions, both in existence and reasonably foreseeable. For receiving waters which support MUN, the Regional Water Board shall consider the California Department of Health Services evaluation of compliance with the Surface Water Filtration and Disinfection regulations contained in Section 64650 through 64666, Chapter 17, Title 22 of the California Code of Regulations. Demonstration of protection of beneficial uses shall include consultation with the California Department of Fish and Game regarding

compliance with the California Endangered Species Act.

C. The exception shall be limited to that increment of wastewater which remains after reasonable alternatives for reclamation have been addressed.

D. The exception shall comply with State Board resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California", and the federal regulations covering antidegradation (40 CFR §131.12).

E. There shall be no discharge of waste during the period May 15 through September 30."

### **Flow Limitations for Outfall 001 discharge to Stream P1.**

Outfall 001 is discharged to an unnamed tributary to the Russian River, termed stream P1 for this permit.

In accordance with the Basin Plan, the permit prohibits the discharge of effluent to stream P1 (Outfall 001) from May 15 through September 30 each year.

During the period of October 1 through May 14, the permit limits the discharge of effluent to P1 (Outfall 001) to not exceed one percent of the natural flow of the Russian River in any one day. The permit establishes flow monitoring requirements to meet the one percent flow restriction based on flow measured at the Cloverdale USGS gaging station # 11463000. The Cloverdale gaging station is the gaging station closest to the discharge location, located upstream of the discharge point. EPA concluded this is consistent with NPDES permits issued by the North Coast Regional Water Quality Control Board, which have established the flow restriction based on the nearest available USGS gaging station.

In addition, EPA concluded that the permittee has demonstrated that the discharge would meet all of the five criteria listed above to qualify for the exception to the one percent discharge rate restriction that would be established on the tributary to the Russian River, Stream P1, if such an exception were required. With respect to each of the five criteria:

#### *Reliability:*

EPA considers the WWTP to be reliable. The Rancheria currently has 200,000 gallons of storage on site, plus a stormwater pond with 350,000 gallons of storage. Effluent monitoring data from the WWTP demonstrate the plant consistently obtaining high quality effluent. The WWTP is designed for redundancy so that all tanks have level sensors, emergency flow shutoff valves, and the system is designed so that if pumps or shutoff valve fails, the wastewater will gravity flow into the next tank rather than spill. Additionally, the treatment system is operated in batch mode, allowing the treatment system residence time to be increased to allow for additional treatment if necessary. A batch treatment process allows the wastewater to be tested prior to discharge, therefore allowing the operator greater control over the system and providing an

opportunity to further treat wastewater that does not meet standards prior to discharge. The Tribe has on-site storage for effluent produced by the treatment plant, which can be routed back into the treatment plant influent for further treatment, should it be required. The Tribe is also planning to expand on-site storage facilities, as detailed in the Engineering Report supporting the NPDES permit application.

Plant operators are on-call 24-hours per day, and also can remotely view, track, and remotely operate treatment plant facilities through an internet connection to the WWTP control system. Any alarms at the WWTP are automatically transmitted to Plant operators via wireless telephones that all Plant operators have in their possession at all times.

*Protects Beneficial Uses:*

The permit establishes effluent limitations and monitoring requirements to meet all designated uses, including MUN and REC1, with no allowance for dilution of the wastewater effluent. Although regulations require that water quality standards must be met at the point the discharge enters waters of the State of California, the permit establishes compliance at the point of discharge to the waterbody on tribal lands prior to reaching waters within the State of California, with no allowance for dilution. Therefore, water quality standards are met at the discharge (“end of pipe”) location prior to discharge to the receiving water under both normal and extreme conditions and under all flow regimes. For purposes of this analysis, EPA has analyzed the impacts of a batch discharge at the maximum authorized flow rate and volume during dry weather conditions.

EPA looked at potential cumulative impacts the discharge will have on the receiving waterbody. There are no other point source discharges to Stream P1 and no other point source is expected to discharge to Stream P1 in the foreseeable future. The only known non-point sources of pollution to P-1 consist of stormwater runoff from the Rancheria (including parking lots and roadways), and stormwater runoff from outside the Rancheria that include parking lots, roadways, and vineyards. Typical pollutants in stormwater runoff include the contribution of sediment, metals, oil and grease, pesticides and herbicides, and increase in temperature.

Stormwater runoff from the casino area, several parking lots, roadways, and the areas surrounding the wastewater treatment plant drain to a stormwater treatment pond, which will remove some of the stormwater pollution. Stormwater runoff from roadways and an overflow parking lot located on the Rancheria drain directly to P1 and may contribute oil and grease, sediment, and metals. Additionally, the Tribe is in the process of a long term restoration project to control erosion and establish native vegetation on P1.

Off the Rancheria, roadways drain directly to P1 and may contribute oil and grease, sediment, and metals. The channelized portion of P-1 through the vineyard is maintained free of vegetation, and may contribute sediment and herbicides to P1.

Based on typical pollutant concentrations expected in non-point source runoff, the treated WWTP effluent is expected to have higher quality water than the non-point source runoff. Therefore, we conclude that the discharge will not detectably increase the cumulative impacts

from non-point source runoff. A biological assessment has been prepared for consultation with National Marine Fisheries Service and the Fish and Wildlife Service. This assessment will also provide the basis for an informal consultation with the California Department of Fish and Game.

*Must Maximize Reclamation:*

The Rancheria will continue to utilize a large portion of treated wastewater effluent for re-use and recycle on-site through use in toilet flushing and on-site landscape irrigation. The Rancheria will continue to utilize all available areas for landscape irrigation and sprayfield disposal, minimizing discharge to P1 to the extent possible. The permit requires the Rancheria to continue these practices and to maximize the available re-use and irrigation, thereby limiting the discharge to that increment which remains after reasonable alternatives for reclamation have been addressed.

*Meet Antidegradation Requirements:*

The permit meets federal requirements for anti-degradation contained in 40 CFR Part 131.12 and State Board Resolution 68-16 requiring high quality waters to be maintained. As explained above, the discharge will meet all water quality standards to protect the beneficial uses of the receiving water without allowing for dilution. The discharge will meet all applicable technology based limits based on best practicable control technologies and is not expected to result in a detrimental affect to the receiving water. As discussed above, the proposed discharge will protect all beneficial uses. Moreover, given the small volume of this discharge and the high level of treatment that will be provided, EPA does not anticipate that there will be any detectable degradation to the quality of the receiving waters as a result of this discharge. The permit establishes effluent limitations for all permits for which there is a reasonable potential to cause or contribute to an exceedance of water quality standards, and contains monitoring requirements for all priority pollutants. The permit also requires monitoring for whole effluent toxicity, which measures the cumulative impact of any pollutants that may be present in the treated wastewater on aquatic organisms. The whole effluent toxicity tests will be conducted at levels that include 100% effluent, thereby demonstrating any adverse affects that may be present in the discharge. Therefore, EPA does not expect any detectable degradation to occur as a result of the discharge.

*Prohibition on Discharge May 15-September 30*

The permit contains a prohibition of discharge to the Russian River and its tributaries from May 15 through September 30 of each year.

Therefore, EPA has evaluated each of these criteria with the Basin Plan, and has concluded that the permit is applying the Basin Plan restriction criteria consistent with NPDES permits issued by the North Coast Regional Water Quality Control Board. For example, NPDES Permit No. CA 0022764 for the City of Santa Rosa, Laguna Subregional Wastewater Collection Facility discharges wastewater to 15 recognized surface water discharge points that include



discharges to Roseland Creek, Colgan Creek, unnamed ditches (all tributaries to the Laguna de Santa Rosa), Santa Rosa Creek, and also directly to the Laguna de Santa Rosa, all tributaries to the Russian River. The Board (finding 15) found that “the Laguna Subregional Facilities qualifies for the exception from the one percent discharge rate restriction contained in the Basin Plan.” The Laguna permit therefore establishes a flow limit restricting the discharge to five percent of the Russian River (not to the tributaries of the Russian River). As noted above, EPA is not allowing an exception criteria to be applied to the Russian River, and the permit restricts the allowable discharge flow to less than one percent of the flow of the Russian River as measured at the Cloverdale USGS gaging station.

### **Flow Limitations for Outfalls 002 and 003 discharge to Stream A1**

Outfalls 002 and 003 discharge to an ephemeral stream located on the Rancheria termed A1 for purposes of this permit. The U.S. Army Corps of Engineers has determined that the Stream A1 channel, which includes the roadside ditch, is hydrologically isolated from the Russian River or other navigable waters of the United States in the watershed, as it terminates in the vineyards. Therefore, the channel is also not tributary to the Russian River.

Due to the termination of A1 in a ditch alongside the vineyards, effluent discharged to stream A1 will be limited to ensure that the discharge will not be a contributing factor to sheetflow onto the vineyard. The permittee conducted a study to estimate the percolation and evapotranspiration capacity of the stream, and estimated a maximum capacity of approximately 27,000 gpd during the winter and 104,000 gpd during the summer.

Background flows in Stream A1 were also determined in that study to vary from near zero in the summer to up to 1 MGD during the winter. The study demonstrated that stream A1 will be able to accept a limited flow during periods of dry weather. However, the percolation and evapotranspiration modeling efforts are difficult to predict within a level of accuracy sufficient to demonstrate the permit requirement that no discharge contribute to sheetflow. Therefore, the permit requires additional field testing be conducted and that the discharge volume be managed in accordance with the results of field testing. Within 30 days of permit issuance, the permittee will submit a final Adaptive Management Plan for EPA approval. A proposed Adaptive Management Plan (Technical Memorandum, Tom Keegan from Curtis Lam, April 20, 2006) has been provided along with the proposed permit.

The adaptive management plan will consider and implement, at a minimum:

- the steps the permittee will take to monitor and document the climatic conditions when sheetflow occurs;
- the steps the permittee will take to evaluate actual percolation and evapotranspiration rates for discharge to A1 during various climatic conditions, starting with a low flow and slowly raising flow levels while closely monitoring

percolation and evapotranspiration.  
a methodology for determining the capacity for discharge during and after rainfall events.

Based on the field study results, the Adaptive Management Plan will be used to establish specific conditions for discharge and monitoring subject to EPA approval.

The conditions for discharge and monitoring will be incorporated into the Surface Water Discharge Operations Plan, subject to EPA approval.

Therefore, the volume of effluent discharged to 002 and 003 is restricted in the permit, year-round, to a flow that will not contribute to sheet-flow at monitoring point termed M004, located at the terminus of the roadside ditch along Highway 128 at 38° 41' 54.47" N 122° 51' 37.78" W.

## **VII. Monitoring Requirements**

### **1. Priority Pollutants**

The discharger must conduct a comprehensive screening test for the Priority Toxic Pollutants listed for the California Toxics Rule in the Code of Federal Regulations (CFR) at 40 CFR Section 131.38, within 90 days of discharge from the new treatment plant, and in the 3rd and 5th years of the permit. If an exceedance of a criteria, or a reasonable potential for exceedance of a criteria is detected the permit may be re-opened to require appropriate limits.

### **2. Whole Effluent Toxicity**

The permit establishes tests for toxicity for chronic toxicity.

Chronic toxicity testing evaluates reduced growth/reproduction at 100 percent effluent. Chronic toxicity is to be reported based on the No Observed Effect Concentration (NOEC). The permittee shall conduct short-term tests with the water flea, *Ceriodaphnia dubia* (survival and reproduction test), the fathead minnow, *Pimephales promelas* (larval survival and growth test) and the green alga, *Raphidocelis subcapitata* (growth test). The presence of chronic toxicity shall be estimated as specified by the methods in the 40 CFR Part 136 as amended on November 19, 2002.

## **VIII. Special Conditions**

### **1. Erosion Control**

The Permittee shall implement best management practices to safeguard against erosion from the discharge and prevent adverse impact to receiving waters.

2. Pretreatment Requirements

As described above, there are no industrial facilities discharging to the WWTP. Therefore, there are no pretreatment requirements in this permit.

3. Re-use Standards

The Rancheria will re-use wastewater for on-site irrigation and non-potable water uses such as toilet flushing. Therefore, the Tribe has agreed to follow the reclamation criteria established by the California Department of Health Services to protect public health and the environment. The California Department of Health Services (DHS) has established statewide reclamation criteria in Chapter 3, Division 4, Title 22, California Code of Regulations (CCR), Section 60304, et seq. (Hereafter Title 22) for the use of reclaimed water. These requirements implement the reclamation criteria in Title 22.

Although the Tribe is not required to comply with these State criteria for wastewater reused on Tribal lands, the Tribe is currently voluntarily willing to follow these criteria for the re-use of its wastewater. These terms are therefore included in the permit.

4. Adaptive Management Plan

The permit includes the requirement to provide an Adaptive Management Plan to establish allowable conditions for discharge to Stream A1, as described in Section V.F of this Statement of Basis.

5. Surface Water Discharge Operations Plan

The permit includes the requirement to develop a Surface Water Discharge Operations Plan (SWDOP) that establishes a plan to be used by WWTP personnel that details the procedures for discharge volumes and locations in compliance with the terms of this permit. The SWDOP will incorporate conditions as a result of the Adaptive Management Plan as described in Section VI.F of this Statement of Basis. The SWDOP will also include the requirement to maintain a daily log of chlorine usage as described in Section VI.E of this Statement of Basis.

**IX. Threatened and Endangered Species**

EPA has completed a draft Biological Evaluation (BE) for the proposed permit. EPA has determined that the proposed permit may affect, but is not likely to adversely affect, the endangered Central California Coast coho (*Oncorhynchus kisutch*), the threatened chinook (*Oncorhynchus tshawytscha*). Therefore, EPA has initiated consultation with NOAA National Marine Fisheries Service and the California Department of Fish and Game.

## **XI. Permit Reopener**

The permit contains a reopener clause to allow for modification of the permit if reasonable potential is demonstrated during the life of the permit.

## **XII. Standard Conditions**

Conditions applicable to all NPDES permits are included in accordance with 40 CFR, Part 122.

## **XIII. Administrative Information**

### **Public Notice**

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to an NPDES permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit. This permit will be public noticed in a local newspaper after a pre-notice review by the applicant and other affected agencies.

### **Public Comment Period**

40 CFR 124.10 requires that permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to EPA. In addition, Section 401(a)(2) of the Clean Water Act provides that, where this provision applies, an affected State may determine within 60 days whether a proposed discharge will violate any water quality requirements of the State. EPA has determined that it is appropriate to apply the procedures of Section 401(a)(2) to this permit application and that it is appropriate to allow public comment on the draft permit during the 60 day period provided for the State determination. After the closing of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

### **Public Hearing**

EPA has announced that a public hearing will be held on the proposed permit.

#### **XIV. Additional Information**

Additional information relating to this proposed permit may be obtained from the following locations:

U.S. Environmental Protection Agency, Region IX  
CWA Standards & Permits Office Mail Code: WTR-5  
75 Hawthorne Street  
San Francisco, California 94105-3901  
Telephone: (415) 972-3518  
Attn: John Tinger

#### **XV. Information Sources**

While developing effluent limitations, monitoring requirements and special conditions for the draft permit, the following information sources were used:

1. Water Quality Control Plan for the State of California, North Coast Region, as amended.
2. EPA Technical Support Document for Water Quality-based Toxics Control dated March 1991.
3. U.S. EPA NPDES Basic Permit Writers Manual (December 1996).
4. 40 CFR Parts 122, 131, and 133.
5. Interim Final Regions 9 and 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs, May 31, 1996.
6. NPDES permit application and Wastewater Engineering Report, February 2005.
7. NPDES permit application forms 2A and 2S, July 2005.
8. Technical Memorandum of Rapid Bioassessment of Drainages P1 and A1, Environmental Science Associates, February 2005.
9. Biological Evaluation, Environmental Science Associates, January 2005.

10. Proposed Adaptive Management Plan for Stream A1, Hydrosience Engineers, April 20, 2006.
11. Draft Biological Evaluation, U.S. EPA, Draft April 6, 2006.